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SPEECH BY JAMES BEGGS

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CHAIRMAN: We're pleased to have as our speaker, James Beggs, Administrator of the National Aeronautics and Space Administration.

(Applause)

MR. BEGGS: Thank you very much, Vivian, and to all my friends at the head table, and all my friends in this audience, there are an awful lot of them out there, we thank you for letting all these NASA folks show up here today, as a matter of fact.

They're all gluttons for punishment; they hear me much too OFTEN down at the office to have to do it after lunch as well.

It's particular pleasing to me to be able to come here today because next week we enter a brand new era in space and many of you in the press have done a very good job in pointing out what is going to happen over the next few years that will literally change the way we view the commercialization and the use of space by means of the space shuttle. Next Thursday will be the first operational flight of space shuttle and it will be an opportunity, I think, to begin again our commitment to using space for the benefit of mankind because that's what they been up to for twenty-four years.

Secondly, I would like to take the opportunity to try to knock down, although I'm sure I won't, the very

pernicious rumor that NASA is fast becoming an adjunct of the Department of Defense. The fact is that nothing could be further from the truth. Last, the last flight of Columbia when Mattingly (ph) and Hartsfeld (ph) were up the - before the flight they went down to the local drugstore and bought themselves a new razor, because one of the problems in space is the shaving - after awhile becomes very difficult, because whiskers get stuck in the razor and you can't shake them out or get them out in anyway in Zero G, so they went down to the drugstore and bought one that had a little button you press that forced the whiskers out. During the mission this marvel of high technology worked as expected and Henry called up on that and said, "Good news, the razor works!" and, of course, the program being what it is that went all over the world and into the loud speakers and it was copied as, "Good news, the laser works!".

Now, of course, we were carrying a military payload this last time and that was blown-up into quite a few very good stories around the Country, and that misconception illustrates one of the problems that we have with this question of whether NASA indeed is becoming more military or militarized or, depending on how you look at it, an adjunct to the Department of Defense.

When NASA was created in 1958, it was assigned

the roles and responsibilities which were an adjunct AND A part of one of its predecessor agencies, the most important one the National Advisory Committee for Aeronautics, which was that we would do research and development and we would, of course, make the results available to the military and well as to the civil community. DOD, in turn, was responsible for the R AND D specifically relating to national security, and we have had what I consider over the years to be a very fine relationship in the research and development activities in each of those sectors. We have in every INSTANCE passed to the Department of Defense that research and development we do which we think has applicability to the defense of the United States, and we're proud of that role and we think that it has had a very major influence, and a very major part in making this Country's defense posture as strong as it is today. We do exchange personnel, we use each other's launch facility, we have used the developments that have come out of the ballistic missile program to create the expendable LAUNCH vehicles we've used for the last twenty years, and we have translated many, many of the various military research and development activities into useful instruments and products which we use in space for civil purposes. So it has been in my view an even exchange. Much has been made of the fact that we use military personnel and,

indeed we do use military personnel. I did a little research on the numbers that have been involved in the Nation's space program. You go back to the '60's when we were at the height of the Apollo program there were about 320 military details into the Agency. The General Manager of the Apollo program was a man by the name of Sam Phillips who was a Lieutenant General out of the Air Force. Sam did a great job for us and the success that we enjoyed in Apollo is in no small measure due to the very strong talents - management talents - that Sam brought to the Agency and that of the people that he brought with him.

But, remember, at that time we had 320 details. Today we have about 90 and that includes all of our military astronauts. We do have another Lieutenant General, again a man we're happy to have, [redacted] ABRAHAMSON in managing our shuttle program. We are very pleased to get those people because, as all of you know, in this day and age it is tough to attract top management talent back to Washington to do the kind of jobs that we find necessary to do, so we're very pleased to have them. It has not, in my view, influenced the Agency to do the things that it would not otherwise do.

The last comment that I would have on this subject is that much has been made of the fact that the

military will be using the shuttle. The military committed ten years ago to the use of the shuttle because it is, in the eyes of all of us, the most efficient, most effective and cheapest way that they can get into space. All the payloads we will be carrying are, in a sense, the kind of payloads that we would put up for civil users. They are military communications satellites, they are military navigation satellites, they are surveillance satellites and they are, in general, the kind of things that contribute to the peacekeeping capability of the Department of Defense.

We're happy to do that for them. They pay their way and, in fact, when I got into town I raised the price to them and they swallowed it almost without objection. They are a very important customer to them and they will use about twenty-five per cent of the capacity of the shuttle for the coming four or five years. We consider them a good customer and we will treat them just as we treat all the other good customers we have.

In keeping with, however, the very broad use of shuttle we will as I've said in the beginning, start into the commercial era because on the fifth mission on November 11th we will take up two commercial communication satellites. They are ANIK 3C which is built, operated and owned by TELESAT Canada and the SBS-3

[redacted] the third in a series of satellites owned by Satellite Business Systems, a private American company which is a joint venture of three different companies.

The shuttle, this time, will carry through four including two mission specialists, one of whom is Joe Allen, whom is well-known I think to many in this room because he spent several years here in Washington working the Washington scene FOR [redacted] NASA. The flight, then, will begin the operational era of shuttle and we have scheduled for the first three years a manifest full of commercial satellites. They are all different and they all represent enormous commercial opportunity in opening up to a greater extent the potential of space, first in the communications area but following that will be a number of additional commercial opportunities we feel very confident.

In addition to the communication satellites, we are all familiar with the currently operating application systems, the meteorologic satellites, the navigational satellites, the earth resources or remote sensing satellites, which are operational and [redacted] are assisting many, many people in doing mundane tasks which would be must more difficult on earth.

We monitor such things as crop forecast, we monitor water resource activities around the world, we are just beginning to understand how to use remote sensing

in a way to determine earth resources, mineral resources, petroleum and other mineral resources on the earth, and we will be, I think, in the coming few years, be using it for a number of uses yet unknown.

As we learn how to use it better, we will find new and better uses for it.

It has been estimated that the current economic benefit from the systems that are flying far exceeds the budget of NASA, and I believe that. Put another way, the studies we have conducted indicate that we are receiving a return on the money we have invested in the order of 20 to 30 percent per year, a very good thing, indeed.

One of the latest illustrates another aspect of THE PROGRAM. The Space Program has been a uniquely international activity since its beginning. We have, and I use this statistic often, over a thousand agreements with a hundred different countries for international cooperation in space.

The most recent of those is one which Congressman Lindy Boggs has been intensely interested in, you all know the reason, on search and rescue, and this was a cooperative endeavor between the United States, the Soviet Union, and the European Space Agency.

We will have a number of search and rescue satellites in orbit in a very short time. The first of

those just happens to be a Soviet satellite, and the monitoring stations in North America have already used that satellite four times in rescuing people and vehicles in distress.

On three of those occasions, we rescued individuals who would [redacted] -- not otherwise [redacted] have been rescued. So it is, if you will, a new capability just coming in, which promises not only enormous benefit in lifesaving capability, but probably property-saving, as well.

Beyond that, we look forward to the era of space manufacturing and materials processing. You all have written broadly on this subject; I think to some extent, we probably over-advertised the manufacturing and materials processing area, but I do think that is has enormous potential.

We think that it will account for a very large part of the activity of shuttle and space platforms and space station activity over the next 20 to 30 years. It will not come quick because these things take 10 to 20 years to develop.

But the first of them looks extremely promising. The use of the zero gravity environment is, of course, the most important aspect, the most important attribute of space flight. And the McDonnell-Douglas Company, in

cooperation with Johnson & Johnson, took hold of a process well known here on earth, known as electroclorisis (ph) which is a means of separating small quantities of material and developed a program and an experiment to use in space.

We flew that the first time on the last flight. It turned out better than we expected. In fact, the quantity of material separated, and the purity of the material, was significantly better. The quantity 400 times that which could be achieved with the operation of the system on earth, and the purity at least a 20 to 30 percent better.

So it appears that in the pharmaceutical business, we have something that has tremendous promise. Products such as Interferon, the use of drugs to treat diabetes, emphysema, hemophilia, and other ailments, now look possible by the use of this machine in space.

We are able, through the Space Program, to make available to companies and to groups of individuals who wish to fly experiments in space, transportation on a free basis. That is an authority that Congress gave us, I think it was a very far reaching and foresighted kind of program.

We can write an agreement with them, fly them for free while they are experimenting, and then, of course, if the facility turns out to be commercial, we will charge

them on the same basis that we charge other commercial companies.

We have, in addition to the McDonnel-Douglas, Johnson & Johnson, a similar agreement with a company [redacted] KNOWN AS GTI SMALLER [redacted], a [redacted] company, for a furnace to be used for metallurgical uses in space, and we will be flying that over the next two or three years.

Beyond those joint endeavor agreements and the experimentation with materials processing in space, there is an enormous amount of commercial interest developing in the space environment. We have a number of joint venture companies and venture capital companies which are interested in getting into the launch vehicle business or in the support of launch services, and that gives me a great deal of solace.

The fact that we now have [redacted] ENTREPRENEURIAL activity very active in this market, indicates to me that we have now reached a plateau which is attracting real hard venture capital into the program where they are coming up with their own ideas on how they can exploit space.

We think that that private sector activity will be tremendously important for the Agency and for the Country in the future, and as the President said on his July 4th policy statement announcement, a climate conducive to expanding private sector investment, and involvement

in space activities is a prime objective of our program.

We are exploring investment in launch services, we're exploring private sector initiatives in the use of the shuttle itself for future activities, and we intend to look hard into how we market better using the private sector, the services that we are offering with the space shuttle.

I should add here that we are in competition; the competition becomes more keen each day. We are com - peting with the Europeans day by day and fighting for the new payloads to be taken into orbit. The Japanese will soon be in the market, and we anticipate that even the Soviets will become more active, because they are making noises that they, too, want to EXPLOIT their capabilities in a commercial way.

NASA, however, is not an operational agency, and we need to rely on the private sector to make our operations a success, and to make sure that we, in the Government side, do not get too deeply involved with the day to day operational responsibilities of operating a system which will eventually be as big and as active as the Shuttle System.

We are dedicated to maintaining our prime THRUST as a research and development agency. Therefore, there will be many changes in the next five to ten

years; as the shuttle becomes fully operational, we expect more of the activity to be picked up by the private sector and to develop it to its full capability.

We believe further, that by -- that as we do that, we will move off to the next phase, which is to put that adjunct to the space shuttle, a space station into orbit, by the 1990's. We will, I believe, be operating a space station, and I think, incidentally, in light of Vivian's announcement, that my friend, J. T. Worth agrees with that.

What he is trying to do is get us to think very carefully through how we are going to plan our way into that program so that we do not prematurely spend a great deal of money in doing something that is not fully ready to put into orbit.

It has many, many very great benefits, though, that will be developed out of this program.

One of the things that we must constantly keep in mind in this Country is that our competitive edge in America is based upon the continuing push on the cutting edge of technology, as my fried, Jim Webb, always used to say. That cutting edge is exemplified by America's Space Program in a better way than any other program in the Federal Government.

It has been developed in a way that shares the

results very quickly and very efficiently with the private sector, and you can make a strong argument. Some of our most competitive industries were pushed and benefited by the fact that we were pushing hard on the R&D program in space.

Computer sciences, sold state electronics, medical electronics, things like industrial gases, all of those industries are industries in which we are still very competitive in the world.

The space station will enable us to expand on that, the development of robotics for the space station will be another important aspect of our research and technology development. We think that is enormously important for the future, it has helped us in the past, and it will help us in the future.

There have been a number of studies which suggest that as we move into the 21st Century, the space industry could be one of the largest businesses in the Country, and I believe that that potential is there.

Business will, however, be like it always has, slow to develop because the research that we do generally takes that 10 or 20 years to come into full commercial exploitation. But it is moving, and it's moving at a rapid rate, and the shuttle, starting next week, is an enormous asset in making it all possible.

We will be pushing that, exploiting it, it is a ball game which will become more active and there will be more players and more activity each year of the coming decade. And as more players are beginning to enter the game, it is possible that we will start to do things that are limited only by the resolution and imagination of man, because this is an area which requires only a continuing push and a continuing use of our minds in order to expand it as far and to go to as distant a goal as we care to set.

We have proven that the New Frontier is one that CONSTANTLY expands in front of us, constantly offers challenge, and constantly provides us with that very basic reason to continue to push in the areas that have meant so much and will continue to mean so much for our Country.

It's only beginning, and as they say in the show biz world, "You ain't seen nothing yet."

Thank you very much.

(Applause)

CHAIRMAN: Thank you. Do you expect the U.S. to ever send men back to the moon? If so, approximately when do you expect a base on the moon?

MR. BEGGS: Well, when WERNHER Von Braun was pushing us to Mars, he laid down a plan -- I think Tom Paine is probably the best exponent of that plan.

today, but the VonBraun plan, which sort of goes over a very long span of time, was that we would do about what we have done after Apollo, that is, you would develop routine access to LOW EARTH orbit with something like the shuttle, which provides economical transportation, and then we would develop a space station, which eventually would enable us to marry with it an orbital transfer vehicle to go to geo-sync, and then when you're in geo-sync, you can go back to the moon relatively easily.

In these days, NASA likes to think of going back to the moon with replicating robots and let the robots construct the station. And then from the moon you would construct the necessary facilities and start working to go to Mars, and a man landing on Mars could take place, led again by the robots, maybe in the year 2076, and that's a nice plan to think about.

The answer to your short question, though, is yes, I expect to go back to the moon. I think that is well within the potential of THE PROGRAM we are conducting. It will be, I think, a good long time before we launch another program of that type because we've got a lot of work in continuing to exploit the systems that we've started since Apollo.

It would not surprise me if our major competitor in this activity did not try some manned activity,

possibly to the moon. As a matter of fact, I think one of the local Soviet diplomats in making a speech, suggested that they were working in that direction.

CHAIRMAN: What is the status of the group looking at proposals for a space station? Will there be a space station in NASA's future, and is NASA asking for space station funding in fiscal '84?

MR. BEGGS: There will be, I believe, a space station, an American space station. Whether we -- incidentally, whether we launch a space station up, there is a space station, a Soviet space station, as you all know, flying up there right now, and it has been manned for close to 180 days, and they are undoubtedly going to push for a new record for a pair of astronauts in space.

And the record, I believe, will be broken sometime during the flight of Columbia in STS-5. So it will go close to 187-190 days. The activity in that program has been intense and growing. It started with a smaller station several years AGO. They de-orbited that station this summer, and put up a larger one, Salut-7. Salut-7 has been manned since it went up, it has been visited by several other Cosmonauts, including one Frenchman, a French Spaceonaut went up this summer to visit, and their second lady Astronaut visited the -- lady Cosmonaut -- visited the station also late this past summer.

So they have been extremely active in that program.

Our intent is to plan our way carefully into it, we could duplicate what the Soviets are doing by going back and taking the technology of Skylab and updating it to the current time. We do not think that's the way we want to go, we think what we do should be planned with the new technology we have available, and certainly should be planned in such a way as to take advantage of the full capabilities of the shuttle.

So we are going to spend the next couple of years in laying out that requirement; we are spending money on it right now, we have about eight contractors working with us in developing the objectives and the systems analyses, the analyses of what you will do with the station. We will proceed from that point to developing a configuration, or as we like to say, the architecture for the station, will take place probably next year or early the year after, and then we hope, at that point, that we'll get a commitment to go ahead and go into the hardware phase, which would enable us to put the station on up, we think sometime around 1990, or shortly thereafter.

CHAIRMAN: A question from Senator Randolph. Do you feel the new 98th Congress will appropriate

adequate funding for the future NASA projects?

MR. BEGGS: Jennings, you know you always do.

(Laughter)

MR. BEGGS: The Congress always gives us more money than I'm permitted to enthusiastically accept. They have been very good to us and the Agency has been, I think, blessed by one of the best relationships of Congressional/Executive agency relationships that has ever existed in this Country, both in the Aeronautics side, which continues to be a very important part of our work, and the space side, the relationship with Congress, in, I might add, a fairly non-partisan way, has been extremely good.

They have always given us the money we needed. There have been times that we argued as to the way in which the money should be used, but we always reached an accommodation and done great things together, and we'll continue to.

CHAIRMAN: When do you plan on giving Dr. Klaus Heiss of Space Tran, an answer on his fifth orbiter proposal? Can you comment, how do you evaluate the practicality of a privately-funded shuttle?

MR. BEGGS: We'll probably -- I hope we'll give him an answer in a week or two. We have been in

discussions with Klaus and his company for the last couple of months, and we're about to, I think, reach the point where we fully understand what he's offering and what our response will be.

Whether we're able to accept that proposal or another proposal, I think there is room for private investment in the shuttle system. The thing that he has offered, which is to buy and give to us, in effect, the fifth orbiter, which is, of course, something we would like to have very much, and then he would have the right to market the CAPACITY of that orbiter.

That will require some degree of flexibility on the part of both NASA and, I think, the Congress as well, to accept it. We're boiling that down to its essentials, and then, of course, we'll have to go up to present it to our Committees whether it is a viable proposition across the board.

But there is lots of room for private investment in this system, there's lot of room for private investment in America's Space Program. We, I think, will see a growing activity of the private sector involving itself in all aspects of the Space Program.

We have people who are talking about buying and designing buses or platforms which will fly instruments in space, or for hire. We have people who are talking

about launching their own expendable launch vehicles to carry smaller payloads, and payloads which cannot be handled on the shuttle, FOR either schedule or other reasons.

We have people who are involved in offering the materials processing services, we have folks who are talking with us now to take over various parts of the processing of payloads for installation, and carries into space on the shuttle.

So there's lot of activity going on, and I feel confident we're going to have a lot of private money coming into the program in the very near future.

CHAIRMAN: Will companies be able to LEASE areas of Cape Kennedy or Houston Space Center?

MR. BEGGS: We do now, and we will do it in the future. We are working on the policy of what kind of lease arrangements and the fees that we will charge for the use of facilities, but we do now have cases where private companies are renting and leasing space or services in -- at Johnson or MARSHALL or Kennedy.

CHAIRMAN: When do you expect the Government to spin space shuttle operations off to a commercial group?

MR. BEGGS: That'a a tough one, as to the time. We are, right now, entering the operational era.

We have by no means finished the development process on the shuttle. There is still much work to be done. The development work on the shuttle will continue over the next two or three years until we have reached its full capability, its full payload capability and the capability operated as we expect it to operate.

About 1985 or '86, when we are over those initial hurdles, I think we will be prepared to sit down and talk very seriously about the way in which it ought to be operated, for the long term. That will mean that perhaps in '87, or perhaps in '88, we might be in a position to put it out on some basis where private contractros can either operate it, or perhaps, if we achieve the objectives we have set for ourselves, sometimes late in the decade, the system will be profitable at least on the basis of operation.

We probably will not be able to recover capital costs, but again, as my friend, Senator Randolph, will tell you, we have never recovered the capital cost of any transportation system we have constructed in this Country.

So, from an operating point of view, it might be a viable private business, and we hope that will happen.

CHAIRMAN: How soon will you allow civilains to ride the shuttle, how will you choose who goes, and

more specifically, what is the earliest space shuttle flight that could have on-board media coverage, and how will the reporters be selected?

(Laughter)

MR. BEGGS: I think I'll ask the National Space Club to do the latter job for us. We will, of course, have the capability of carrying passengers up in the very near future. We have four MEN going up in STS-5, we'll eventually have the capability for six or seven seats in the shuttle within a year or two from now.

So we will have room for passengers to come along and we expect that we will be taking passengers along. There are many folks who have indicated an interest in going. The question is always asked, how are you going to select them, and being as that was too hot a potato for me, I convened a panel of one of our advisory boards, AS you know we still have a lot of advisory boards in NASA, headed by Dr. John NAUGLE, a long-time NASA employee, who is now working for Fairchild, to pull a panel together, and he's got lots of interesting people including Jim Michener, on that panel, and they're wrestling with the problem of how we should properly set up a selection criteria and a board to decide who goes up and in what order.

But we do really hope that one of the early

passengers will be a journalist because we think that the prospect of getting the -- a story, or maybe a lot of stories, from that perspective will be very, very valuable for the program, and I think it will also do a thing that we have tried to do in this program from the beginning, and that is, to make it very, very close to the public.

It has always been an open program and the public has been invited to participate, and I think that the professional journalism can add a lot to that in actually experiencing a flight themselves and then coming back and writing in a way that the public can understand it much better than they can with professionals that we fly.

CHAIRMAN: How would you compare the U.S. and Soviet Space Programs, pluses and minuses, and particularly in military space application, IF you can talk about that?

MR. BEGGS: Well, of course they were first, and they make quite a lot of -- they still make quite a lot of that in international commmunities. They were first in space, they have had a lot of "firsts" in the development of space.

We, of course, went by them very quickly in the 60's with the Apollo Program. The Apollo Program

was specifically designed to do just that, and in my view, we are still pre-eminent across the board. We're certainly doing more and, from a scientific point of view, far ahead of them because our instuments are better, our programs have been more ambitious, and we have brought back a good deal more information than they have.

Nevertheless, their program, in a scientific way, is still quite impressive. The two Venus landers this year were very impressive scientific achievements. I might add that we share information on the scientific programs. We get access to the information they bring back, and they, too, get access to that which we bring back in the scientific world.

We have good exchange agreements with them and as far as we have been able to determine, the sharing has been above-board, and we have gotten pretty much everything that they have received from their scientific work.

With respect to the manned program, we, of course, did the very impressive Apollo Program, we landed 12 men on the moon, an achievement which I don't think they are capable of duplicating at this time.

But they, in turn, have been much more active in flying in LOW EARTH orbit than we have. As I mentioned, for the last five years they have been up there for more

than half the time. Many of their astronauts have significantly longer records of time in space than ours do. As a matter of fact, they fly a number of foreign astronauts. The Vietnamese gentleman that they flew with them has more time in space than I think all of the astronauts that we've flown on shuttle.

So they have been very active in that, and they are undoubtedly learning a lot by that activity.

With respect to the military program, I'm -- I keep telling people I'm the civil side of the space, and people keep asking me about the military. They are very active in a military sense, they're active much the same as we, using space to enhance their military capability with communications satellites, navigational satellites, surveillance satellites, and all those good things.

They, of course, have been very agressive in developing anti-satellite weapons, and they have had an anti-satellite WEAPON under development for almost the last ten years, and it is now operational. It's a first generation system, but it is the first use of an agressive military system in space.

So it is worrisome that they have been that active, but they still do maintain a reasonably strong thrust, although it's a minority of their program in the

civil and scientific aspects.

CHAIRMAN: Can you tell us more about the Soviet satellite Cospas, [redacted], that has saved some American lives. It seems to be the only program that the U.S. and U.S.S.R. are doing together.

MR. BEGGS: Well, no, it isn't the only one that we're doing together. That is an agreement, it was written several years ago, and it is an international cooperative activity with ourselves, the Soviets, and the Europeans, although all nations of the world are participating in it.

It will eventually be a net of 12 or more satellites, and they are all compatible, they're standard systems, so that by buying a small transmitter, which is very inexpensive, when you are flying on your aircraft or going out on your boat, or going anywhere, you can carry one along with you and if you do get in distress, then you can communicate with the satellite which happens to be passing over at the time.

There will be established monitoring stations all over the world that they can get a fix on any distress signal at any given point in time. When the system's fully up, you'll be able to do that within minutes, right now it is measured in hours because we only have the one Soviet satellite up. But in the next three years, they

will all be in operation, and we will be in a position to, I think, save or communicate with very quickly, with anyone who has gone down or in distress on the oceans, and that, indeed, is a very impressive and desirable capability.

We still lose a lot of ships and boats at sea, as the Coast Guard says, without a trace. As a matter of fact, a very large merchant ship went down here just a year or two ago, and it disappeared, as the Coast Guard says, without a trace.

When we get this system in operation, they won't disappear without a trace because they will be able to communicate very quickly. We have had four instances of use of the Soviet satellite so far; in three of those cases, we saved lives. So the potential is there and it's coming fast.

CHAIRMAN: Does NASA still have a mission to explore outer space, the planets, comets, etc., or has it become a Department of Agriculture? What is the timetable for exploration of the outer planets, and why did you drop active participation in the study of Halley's Comet?

MR. BEGGS: The short answer is we certainly do. We still have, coming along, two very impressive programs. One is a return to Jupiter, called Galileo,

which will put a probe into the Jovian atmosphere, and of course, that's a program that has been under development for several years now.

The second is the large space telescope, which will go up in 1985. The Galileo will go in '86, the large space telescope will go in '85, and will enable us to -- the way we like to put it -- see seven times further, and objects 50 times cleaner, with 10 times the clarity, of any system here on earth, astronomical system here on earth.

So we will begin to learn things about the universe, we can view the planets in a much clearer way, and it will be a truly major advance in science -- or science-astronomy. The results of that will come back into a new space telescope institute, which will be an adjunct of Johns Hopkins University in Baltimore, and will be available to scientists around the world.

The Halley's was something, I guess, that everybody regrets, because the Halley's only comes around once every 75-plus years, and when NASA first started to look at Halley's, the mission that the science community wanted was called the HER mission, the Halley's Earth Return.

The mission that the other countries -- the European Space Agency, the Soviets and the Japanese, are

running the Halley's Intercepts, or the HIM mission. Our scientists felt that unless we did the HER mission, it was not cost-effective to spend the money in duplicating what a number of other countries were doing.

When I got here, we looked at it again, it was really too late to do the HER mission, even if we could have raised the money, although I doubt that we could have at that point, so we passed the opportunity by.

NASA, for its part, has agreed to spend money to aggregate the results of the all of the missions that the other countries are running. So we will get the results of the Soviet, the European, and the Japanese missions, and we will have an information and dissemination center out here at Goddard, which will be, I think, by the time they're through, the world's foremost authority on the Halley's comet.

Comets do come by from time to time. They're not as rare as once every 75 years, as a matter of fact, they come by every few years -- the major ones come by every few years, and we will, I'm sure, in due time, go out and do the HER mission on a comet, and find out a little bit about what makes them up, what material is and maybe where they come from, and how they develop.

We have not given up the exploration mission,

and I don't believe this Country will give up the exploration mission. The next one we would like to do is the Venus Mapper because Venus is, perhaps, the most interesting of our sister planets, and it's about our size, but -- and it lies within a distance from the sun that ought to make it a good deal like earth.

But nevertheless, it's a great deal different than EARTH, so it's worth studying from the comparative planetology point of view, and we intend to go back to venus sometime towards the end of the decade with the Mapper.

We'll be trying to initiate that program this year or next, and get going on the next phase of understanding what makes Venus tick. Beyond that, we'd like to go back to Mars with a Mars polar-orbiter, because Mars, too, is very interesting, and there is some water on Mars, mostly at the poles, and the topography of Mars is exceedingly interesting from the point of view of how a planet develops, and since it probably developed very early, and it's kind of frozen in time and space, it's worthwhile going and studying, so we'd like to do that mission after we do the Mapper mission.

I think we sometimes lose sight of the fact that these things take a long time. You don't do them very quickly and the trouble is that a Voyager flies

by Saturn, and you get those beautiful pictures, and you say why don't we do more of that. The problem is that the Voyager Program was planned -- as a matter of fact, it was in the planning phase when I was with NASA the first time back in 1967, '68 time period, and it just flew by Saturn this year.

It takes about 10 years from the time you start to develop the plan for those programs until they actually fly. So what we try to do is start one every so often, so that on phase periods results come in, and we continue to have an active program that scientists can work and study.

CHAIRMAN: A quick question. Is it true you will be asked to join the State Department or the Pentagon before the end of the year in the coming round of Administration changes?

MR. BEGGS: No.

(Laughter)

CHAIRMAN: Another quick one. Will NASA ever move its Mission Control activities from Houston to Florida?

MR. BEGGS: That's sort of a complex question. The answer is yes and no. As the shuttle matures, we will move more of the operations down to Kennedy. The program, as it develops, will require that we do a lot

more of the integrating functions close to the launch site. But Johnson will continue to be the major activity as far as the planning is concerned, as far as the software and the control aspects are concerned, and as far as the astronaut-base, if you will, for operations.

CHAIRMAN: Before I ask our last question, I want to present you with a certificate of appreciation for appearing at the National Press Club, and with a National Press Club necktie.

MR. BEGGS: Thank you.

CHAIRMAN: And now for our last question. How come a Pittsburgh boy wears a ten-gallon hat? Do you secretly long to be a Texan?

(Laughter)

MR. BEGGS: No, I am a Texan. I was born in Pittsburgh, but I was raised in Dallas, Texas. When I got my last assignment, I had a responsibility in Fort Worth, Texas, and they used to invite people down and we'd always give them, as my boss used to say, a cowboy hat, and I kept patiently explaining to him, "No, boss, that isn't a cowboy hat, cowboys don't wear Stetsons."

So we'd give them a Stetson, and I had to wear one as well, and I got used to it.

CHAIRMAN: Thank you very much.

(Applause)

(Whereupon, the meeting was concluded.)